



RECEIVED

FEB 13 2001

1

SEQUENCE LISTING

TECH. CENTER 1600/2900

<110> CHEN, Jiandong
AGRAWAL, Sudhir
ZHANG, Ruiwen

<120> MD-M2-SPECIFIC ANTISENSE OLIGONUCLEOTIDES

<130> 29924/98057C

<140> 09/541,848

<141> 2000-04-03

<150> 09/383,507

<151> 1999-08-26

<150> 09/073,567

<151> 1998-05-06

<150> 08/916,834

<151> 1997-08-22

<160> 51

<170> PatentIn Ver. 2.0

<210> 1

<211> 2372

<212> DNA

<213> Homo sapiens

<400> 1

gcaccgcgcg	agcttggtcg	cttctggggc	ctgtgtggcc	ctgtgtgtcg	gaaagatgga	60
gcaagaagcc	gagcccgagg	ggcggccgcg	accctctga	ccgagatcct	gctgctttcg	120
cagccaggag	caccgtccct	ccccggatta	gtgcgtacga	gcgcccagtg	ccctggccccg	180
gagagtggaa	tgatccccga	ggcccagggc	gtcgtgttc	cgcagtagtc	agtccccgtg	240
aaggaaactg	gggagtcttg	agggaccccc	gactccaagc	gcgaaaaccc	cggatgggtga	300
ggagcaggca	aatgtgcaat	accaacatgt	ctgtacctac	tgatgggtgct	gtaaccacct	360
cacagattcc	agcttcggaa	caagagaccc	tggttagacc	aaagccattg	cttttgaagt	420
tattaaagtc	tggtggtgca	caaaaagaca	cttatactat	gaaagaggtt	cttttttatc	480
ttggccagta	tattatgact	aaacgattat	atgatgagaa	gcaacaacat	attgtatat	540
gttcaaatga	tcttctagga	gatttgtttg	gcgtgccaa	cttctctgtg	aaagagcaca	600
ggaaaatata	taccatgatc	tacaggaact	tggtagtagt	caatcagcag	gaatcatcgg	660
actcaggtac	atctgtgagt	gagaacaggt	gtcaccttga	aggtgggagt	gatcaaaagg	720
accttgtaca	agagcttcag	gaagagaaac	cttcactctc	acatttgggt	tctagaccat	780
ctacctcatc	tagaaggaga	gcaattagtg	agacagaaga	aaattcagat	gaattatctg	840
gtgaacgaca	aagaaaacgc	cacaaatctg	atagtatttc	cctttccttt	gatgaaagcc	900
tggtctctgtg	tgtaataagg	gagatatgtt	gtgaaagaag	cagtagcagt	gaatctacag	960
ggacgccatc	gaatccggat	cttgatgctg	gtgtaagtga	acattcaggt	gattgggttg	1020
atcaggattc	agtttcagat	cagtttagtg	tagaatttga	agttgaatct	ctcgactcag	1080
aagatttatag	ccttagtgaa	gaaggacaag	aactctcaga	tgaagatgat	gaggatatatc	1140
aagttactgt	gtatcaggca	ggggagagtg	atacagattc	atttgaagaa	gatcctgaaa	1200
tttccttagc	tgactattgg	aaatgcactt	catgcaatga	aatgaatccc	ccccttccat	1260
cacattgcaa	cagatgttgg	gcccttcgtg	agaattggct	tcctgaagat	aaagggaaaag	1320
ataaagggga	aatctctgag	aaagccaaac	tggaaaactc	aacacaagct	gaagaggggt	1380
ttgatgttcc	tgattgtaaa	aaaactatag	tgaatgattc	cagagagtca	tgtgttgagg	1440
aaaatgatga	taaaattaca	caagcttcac	aatcacaaga	aagtgaagac	tattctcagc	1500
catcaacttc	tagtagcatt	atttatagca	gccagaaga	tgtgaaagag	tttgaaagg	1560
aagaaaccca	agacaaagaa	gagagtgtgg	aatctagttt	gccccttaat	gccattgaac	1620
cttgtgtgat	ttgtcaaggt	cgacctaaaa	atggttgcat	tgtccatggc	aaaacaggac	1680
atcttatggc	ctgctttaca	tgtgcaaaga	agctaaagaa	aaggaataag	ccctgcccag	1740
tatgtagaca	accaattcaa	atgattgtgc	taacttattt	cccctagttg	acctgtctat	1800

```

aagagaatta tatatttcta actatataac cctaggaatt tagacaacct gaaatttatt 1860
cacatatatc aaagtgagaa aatgcctcaa ttcacataga tttcttctct ttagtataat 1920
tgacctactt tggtagtgga atagtgaata cttactataa tttgacttga atatgtagct 1980
catcctttac accaactcct aattttaaat aattttctact ctgtcttaaa tgagaagtac 2040
ttgggtttttt ttttcttaaa tatgtatatg acattttaaat gtaacttatt attttttttg 2100
agaccgagtc ttgctctgtt acccaggctg gagtgcagtg ggtgatcttg gctcactgca 2160
agctctgccc tccccgggtt cgcaccattc tcctgcctca gcctcccaat tagcttggcc 2220
tacagtcatc tgccaccaca cctgggcta tttttgtact tttagtagag acagggtttc 2280
accgtgttag ccaggatggt ctcgatctcc tgacctcgtg atccgcccac ctcggcctcc 2340
caaagtgtctg ggattacagg catgagccac cg 2372

```

<210> 2
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S4

<400> 2
 ttggccagta tattatgact 20

<210> 3
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5

<400> 3
 ccttgaaggt gggagtgatc 20

<210> 4
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S7

<400> 4
 tggatcagga ttcagtttca 20

<210> 5
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide M4

<400> 5
 gatgactcac accatcatgg 20

<210> 6
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide K

<400> 6
 cagagccttc atcttcccag 20

<210> 7
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S1

<400> 7
 acctcacaga ttccagcttc 20

<210> 8
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S2

<400> 8
 ccagcttcgg aacaagagac 20

<210> 9
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S3

<400> 9
 tctacctcat ctagaaggag 20

<210> 10
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S6

<400> 10
 tccttagctg actattggaa 20

<210> 11
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S8

<400> 11
tcatgcaatg aaatgaatcc

20

<210> 12
<211> 1710
<212> DNA
<213> mouse

A¹

<400> 12
gaggagccgc cgcctttctcg tcgctcgagc tctggacgac catggctcgt caggccccgt 60
ccgcggggcc tccgcgctcc ccgtgaaggg tcggaagatg cgcgggaagt agcagccgtc 120
tgctgggcca gcgggagacc gaccggacac ccctggggga ccctctcgga tcaccgcgtc 180
tctcctgcgg cctccaggcc aatgtgcaat accaaccatgt ctgtgtctac cgaggggtgtc 240
gcaagcacct cacagattcc agcttcggaa caagagactc tggttagacc aaaaccattg 300
cttttgaagt tggtaaagtc cgttggagcg caaaacgaca cttacactat gaaagagatt 360
atattttata ttggccagta tattatgact aagaggttat atgacgagaa gcagcagcac 420
attgtgtatt gttcaaata tctcctagga gatgtgtttg gagtcccgag tttctctgtg 480
aaggagcaca ggaaaatata tgcaatgatc tacagaaatt tagtggctgt aagtcagcaa 540
gactctggca catcgctgag tgagagcaga cgtcagcctg aaggtgggag tgatctgaag 600
gatcctttgc aagcgccacc agaagagaaa ccttcactct ctgatttaat ttctagactg 660
tctacctcat ctagaaggag atccattagt gagacagaag agaacacaga tgagctacct 720
ggggagcggc accggaagcg ccgcagggtc ctgtcctttg atccgagcct gggctctgtg 780
gagctgaggg agatgtgcag cggcggcacg agcagcagta gcagcagcag cagcaggtcc 840
acagagacgc cctcgcatca ggatccttgac gatggcgtaa gtgagcattc tgggtgattgc 900
ctggatcagg attcagtttc tgatcagttt agcgtggaat ttgaagttga gtctctggac 960
tcggaagatt acagcctgag tgacgaaggg cagcagctct cagatgagga tgatgaggtc 1020
tatcgggtca cagtctatca gacaggagaa agcgatacag actcttttga aggagatcct 1080
gagatttctt tagctgacta ttggaagtgt acctcatgca atgaaatgaa tcctcccctt 1140
ccatcacact gcaaaagatg ctggaccctt cgtgagaact ggcttccaga cgataagggg 1200
aaagataaag tggaaatctc tgaaaaagcc aaactggaaa actcagctca ggcagaagaa 1260
ggcttggatg tgcctgatgg caaaaagctg acagagaatg atgctaaaga gccatgtgct 1320
gaggaggaca gcgaggagaa ggccgaacag acgcccctgt cccaggagag tgacgactat 1380
tcccaacct cgacttccag cagcattggt tatagcagcc aagaaagcgt gaaagagttg 1440
aaggaggaaa cgcagcacia agacgagagt gtggaatcta gcttctccct gaatgccatc 1500
gaaccatgtg tgatctgcca ggggcggcct aaaaatggct gcattgttca cggcaagact 1560
ggacacctca tgtcatgttt cacgtgtgca aagaagctaa aaaaaagaaa caagccctgc 1620
ccagtgtgca gacagccaat ccaaatgatt gtgctaagtt acttcaacta gctgacctgc 1680
tcacaaaaat agaattttat atttctaact 1710

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide S5-1

<400> 13
acatctgtga gtgagaacag

20

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide S5-2

<400> 14
gtgagtgaga acaggtgtca

20

<210> 15
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5-3

<400> 15
 tgagaacagg tgtcaccttg 20

<210> 16
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5-4

<400> 16
 acaggtgtca ccttgaaggt 20

<210> 17
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5-5

<400> 17
 tgggagtgat caaaaggacc 20

<210> 18
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5-6

<400> 18
 gtgatcaaaa ggaccttgta 20

<210> 19
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide S5-7

<400> 19
 aaggaccttg tacaagagct 20

<210> 20
 <211> 20
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide S7-1

<400> 20

tgaacattca ggtgattggt

20

<210> 21

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide S7-2

<400> 21

attcaggtga ttggttggt

20

<210> 22

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide S7-3

<400> 22

aggtgattgg ttggatcagg a

21

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide S7-4

<400> 23

attcagtttc agatcagttt

20

<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide S7-5

<400> 24

gatcagttta gtgtagaatt

20

<210> 25

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS2M2

<400> 25
tgacacttgt tcttactcac

20

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS2M4

<400> 26
tgactcttgt ccttactcac

20

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220> ---
<223> Description of Artificial Sequence:
oligonucleotide AS4

<400> 27
agtcataata tactggccaa

20

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS5

<400> 28
gatcactccc accttcaagg

20

<210> 29
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS7

<400> 29
tgaaactgaa tcctgatcca

20

<210> 30
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS1

<400> 30
gaagctggaa tctgtgaggt 20

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS2

<400> 31
gtctcttggt ccgaagctgg 20

<210> 32
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS3

<400> 32
ctccttctag atgaggtaga 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS6

<400> 33
ttccaatagt cagctaagga 20

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS8

<400> 34
ggattcattt cattgcatga 20

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS5-1

<400> 35
ctgttctcac tcacagatgt 20

<210> 36
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide AS5-2

<400> 36
 tgacacctgt tctcactcac 20

<210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide AS5-3

<400> 37
 caaggtgaca cctgttctca 20

<210> 38
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide AS5-4

<400> 38
 accttcaagg tgacacctgt 20

<210> 39
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide AS5-5

<400> 39
 ggtccttttg atcactccca 20

<210> 40
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 oligonucleotide AS5-6

<400> 40
 tacaagggtcc ttttgatcac 20

<210> 41
 <211> 20
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS5-7

<400> 41

agctcttgta caaggtcctt

20

<210> 42

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS7-1

<400> 42

accaatcacc tgaatgttca

20

<210> 43

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS7-2

<400> 43

atccaaccaa tcacctgaat

20

<210> 44

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS7-3

<400> 44

tcctgatcca accaatcacc t

21

<210> 45

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS7-4

<400> 45

aaactgatct gaaactgaat

20

<210> 46

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
oligonucleotide AS7-5

<400> 46
aattctacac taaactgatc

20

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS5-2H

<400> 47
ugacacctgt tctcacucac

20

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide AS5-2HM

<400> 48
ugagaccagt tgtcagucac

20

<210> 49
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<400> 49
aagctcttgt acaaggtcct ttgatcact cccaccttca aggtgacacc tgttctcact 60
cacagatgta cct 73

<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide ASM

<400> 50
ugtcaccctt tttcatucac

20

<210> 51
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide M4

<400> 51
gatgactcac accatcaagg

20

A'
